

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

AMENDMENTS TO THE CLAIMS

1. (currently amended) A primer composition comprising a modified polyolefin composition having pendant unsaturated groups and at least one other pendant functional group, the modified polyolefin comprising the reaction product of a functionalized polyolefin and one or more ethylenically unsaturated compounds having a functional group reactive with the functional group on the functionalized polyolefin, ~~wherein the functionalized polyolefin is prepared from a polyolefin having a heat of fusion of 0 to 10 calories/gram.~~

2. (currently amended) The primer ~~modified polyolefin~~ composition of claim 1, wherein the functionalized polyolefin is obtained by reacting a polyolefin polymer selected from the group consisting of ethylene copolymers prepared from ethylene and alpha olefins having 3 to about 10 carbon atoms; polypropylene; propylene copolymers prepared from ethylene or alpha olefins having from 4 to about 10 carbon atoms; poly(1-butene); and 1-butene copolymers prepared from 1-butene and ethylene or alpha olefins having 3 to about 10 carbon atoms, with monomers selected from the group consisting of unsaturated carboxylic acid esters, unsaturated carboxylic acids, unsaturated carboxylic anhydrides, vinyl monomers, acrylic monomers, or mixtures thereof.

3. (currently amended) The primer ~~modified polyolefin~~ composition of claim 2, wherein the polyolefin polymer is an ethylene-propylene copolymer comprised of about 80 mole percent propylene and about 20 mole percent ethylene.

4. (currently amended) The primer ~~modified polyolefin~~ composition of claim 2, wherein the unsaturated carboxylic acid esters, unsaturated carboxylic acids, unsaturated carboxylic anhydrides, vinyl monomers, and acrylic monomers are selected from the group consisting of maleic anhydride, citraconic anhydride, itaconic anhydride, glutaconic anhydride, 2,3-dimethylmaleic anhydride, maleic acid, fumaric acid, citraconic acid, 2-pentenoic acid, 2-methyl-2-pentenoic acid, dimethyl maleate,

di-n-propyl maleate, diisopropyl fumarate, dimethyl itaconate, methyl acrylate, methacrylic acid, hydroxyethyl acrylate, ethyl acrylate, methyl acrylate, ethyl methacrylate, methyl crotonate, ethyl crotonate, hydroxyethyl methacrylate, hydroxypropyl acrylate, hydroxypropyl methacrylate, and mixtures thereof.

5. (currently amended) The primer ~~modified polyolefin~~ composition of claim 1, wherein the ethylenically unsaturated compound is selected from the group consisting of hydroxyethyl acrylate, hydroxyethyl methacrylate, hydroxypropyl acrylate, hydroxypropyl methacrylate, polyethylene-glycol monoacrylate, polyethyleneglycol monomethacrylate, polyalkyleneglycol monomethacrylate, polypropyleneglycol monoacrylate, polypropyleneglycol mono-methacrylate, maleic anhydride, citraconic anhydride, itaconic anhydride, glutaconic anhydride, 2,3-dimethylmaleic anhydride, maleic acid, fumaric acid, citraconic acid, mesaconic acid, glutaconic acid, acrylic acid, methacrylic acid, crotonic acid, 2-pentenoic acid, 2-methyl-2-pentenoic acid, dimethyl maleate, diethyl maleate, di-n-propyl maleate, diisopropyl maleate, dimethyl fumarate, diethyl fumarate, di-n-propyl fumarate, diisopropyl fumarate, dimethyl itaconate, and mixtures thereof.

6. (currently amended) The A-solvent-based primer composition of claim 1, ~~wherein the composition further comprises the modified polyolefin of claim 1,~~ a solvent, and optionally, a photoinitiator.

7. (currently amended) The ~~solvent-based~~ primer composition of claim 6, wherein the solvent is selected from the group consisting of ester solvents, ketone solvents, aliphatic solvents, aromatic solvents, and mixtures thereof.

8. (currently amended) The ~~solvent-based~~ primer composition of claim 6, wherein said photoinitiator is selected from the group consisting of acetophenone and benzophenone/tertiary amine combinations; organic peroxides; benzoin and its ethers; and benzil and benzil ketals.

9. (currently amended) The ~~solvent-based~~ primer composition of claim 6, wherein said photoinitiator is ~~added~~ present in the range of 0.01 to 8.0 weight percent based on the non-volatile, ethylenically unsaturated content of the coating composition.

10. (currently amended) The ~~solvent-based~~ primer composition of claim 6, further comprising auxiliary polymerizable monomers and/or oligomers.

11. (currently amended) The ~~solvent-based~~ primer composition of claim 10, wherein said auxiliary polymerizable monomers and/or oligomers is selected from the group consisting of vinyl acetate, N-vinyl pyrrolidone methyl (meth)acrylate, butyl (meth)acrylate, 2-hydroxyethyl (meth)acrylate, neopentylglycol di(meth)acrylate, triethyleneglycol di(meth)acrylate, trimethylolpropane triacrylate, (meth)acrylated urethanes, (meth)acrylated epoxies, and (meth)acrylated polyesters and polyethers.

12. (currently amended) The ~~A water-based~~ primer composition ~~comprising:~~
~~a. the modified polyolefin composition~~ of claim 1; wherein the
composition further comprises:

- ~~b.~~ from 18 to 50 weight percent, based on the weight of the modified polyolefin component (a), of a surfactant;
- ~~c.~~ from 2 to 30 weight percent, based on the weight of the modified polyolefin component (a), of an amine;
- ~~d.~~ water; and optionally,
- ~~e.~~ a photoinitiator.

13. (currently amended) The ~~water-based~~ primer composition of claim 12, wherein said surfactant is selected from the group consisting of primary ethoxylated alcohols having 12 to 15 carbon atoms and secondary ethoxylated alcohols having 11 to 15 carbon atoms.

14. (currently amended) The ~~water-based~~ primer composition of claim 12, wherein said amine is ~~a primary, secondary or tertiary amine~~ selected from the group

consisting of morpholine, 2-amino-2-methyl-1-propanol, triethylamine, tributylamine, ammonium hydroxide, 2-dimethylaminoethanol, triethanolamine, and 2-propylaminoethanol.

15. (currently amended) The ~~water-based~~ primer composition of claim 12, wherein said photoinitiator is selected from the group consisting of acetophenone and benzophenone/tertiary amine combinations; organic peroxides; benzoin and its ethers; and benzil and benzil ketals.

16. (currently amended) The ~~water-based~~ primer composition of claim 12, further comprising auxiliary polymerizable monomers and/or oligomers.

17. (currently amended) The ~~water-based~~ primer composition of claim 16, wherein said auxiliary polymerizable monomers and/or oligomers is selected from the group consisting of vinyl acetate, N-vinyl pyrrolidone methyl (meth)acrylate, butyl (meth)acrylate, 2-hydroxyethyl (meth)acrylate, neopentyl glycol di(meth)acrylate, triethyleneglycol di(meth)acrylate, trimethylolpropane triacrylate, (meth)acrylated urethanes, (meth)acrylated epoxies, and (meth)acrylated polyesters and polyethers.

18. (currently amended) An ~~modified polyolefin~~ adhesive composition comprising:

- a. the primer ~~modified polyolefin~~ composition of claim 1,
- b. an adhesive, and optionally,
- c. a photoinitiator.

19. (currently amended) The ~~modified polyolefin~~ adhesive composition of claim 18, wherein said photoinitiator is present and is selected from the group consisting of acetophenone and benzophenone/tertiary amine combinations; organic peroxides; benzoin and its ethers; and benzil and benzil ketals.

20. (currently amended) The ~~modified polyolefin~~ adhesive composition of claim 18, further comprising auxiliary polymerizable monomers and/or oligomers.

21. (currently amended) The ~~modified polyolefin~~ adhesive composition of claim 20, wherein said auxiliary polymerizable monomers and/or oligomers is selected from the group consisting of vinyl acetate, N-vinyl pyrrolidone methyl (meth)acrylate, butyl (meth)acrylate, 2-hydroxyethyl (meth)acrylate, neopentyl glycol di(meth)acrylate, triethyleneglycol di(meth)acrylate, trimethylolpropane triacrylate, (meth)acrylated urethanes, (meth)acrylated epoxies, and (meth)acrylated polyesters and polyethers.

22. (currently amended) A process for preparing a coated substrate comprising:

- a. applying the ~~modified polyolefin~~ primer composition of claim 1 to a substrate;
- b. exposing the ~~modified polyolefin~~ primer composition on the substrate to an amount of ultraviolet radiation sufficient to effect a degree of curing of said primer composition ~~modified polyolefin~~ on said substrate; and
- c. applying a paint topcoat to said substrate.

23. (currently amended) An article of manufacture comprising a substrate and the primer ~~modified polyolefin composition~~ of claim 1.

24. (currently amended) A primer composition comprising a modified polyolefin composition having pendant unsaturated groups, the modified polyolefin comprising the reaction product of a functionalized polyolefin and one or more ethylenically unsaturated compounds having a functional group reactive with the functional group on the polyolefin.

25. (currently amended) The primer ~~modified polyolefin~~ composition of claim 24, wherein the functionalized polyolefin is obtained by reacting a polyolefin

polymer selected from the group consisting of ethylene copolymers prepared from ethylene and alpha olefins having 3 to about 10 carbon atoms; polypropylene; propylene copolymers prepared from ethylene or alpha olefins having from 4 to about 10 carbon atoms; poly(1-butene); and 1-butene copolymers prepared from 1-butene and ethylene or alpha olefins having 3 to about 10 carbon atoms, with monomers selected from the group consisting of unsaturated carboxylic acid esters, unsaturated carboxylic acids, unsaturated carboxylic anhydrides, vinyl monomers, acrylic monomers, or mixtures thereof.

26. (currently amended) The ~~modified polyolefin~~ primer composition of claim 25, wherein the polyolefin polymer is an ethylene-propylene copolymer comprised of about 80 mole percent propylene and about 20 mole percent ethylene.

27. (currently amended) The ~~modified polyolefin~~ primer composition of claim 25, wherein the unsaturated carboxylic esters, unsaturated carboxylic acids, unsaturated carboxylic anhydrides, vinyl monomers, and acrylic monomers are selected from the group consisting of maleic anhydride, citraconic anhydride, itaconic anhydride, glutaconic anhydride, 2,3-dimethylmaleic anhydride, maleic acid, fumaric acid, citraconic acid, 2-pentenoic acid, 2-methyl-2-pentenoic acid, dimethyl maleate, di-n-propyl maleate, diisopropyl fumarate, dimethyl itaconate, methyl acrylate, methacrylic acid, hydroxyethyl acrylate, ethyl acrylate, methyl acrylate, ethyl methacrylate, methyl crotonate, ethyl crotonate, hydroxyethyl methacrylate, hydroxypropyl acrylate, hydroxypropyl methacrylate, and mixtures thereof.

28. (currently amended) The primer ~~modified polyolefin~~ composition of claim 24, wherein the ethylenically unsaturated compound is selected from the group consisting of hydroxyethyl acrylate, hydroxyethyl methacrylate, hydroxypropyl acrylate, hydroxypropyl methacrylate, polyethylene-glycol monoacrylate, polyethyleneglycol monomethacrylate, polyalkyleneglycol monomethacrylate, polypropyleneglycol monoacrylate, polypropyleneglycol mono-methacrylate, maleic anhydride, citraconic anhydride, itaconic anhydride, glutaconic anhydride, 2,3-dimethylmaleic anhydride,

maleic acid, fumaric acid, citraconic acid, mesaconic acid, glutaconic acid, acrylic acid, methacrylic acid, crotonic acid, 2-pentenoic acid, 2-methyl-2-pentenoic acid, dimethyl maleate, diethyl maleate, di-n-propyl maleate, diisopropyl maleate, dimethyl fumarate, diethyl fumarate, di-n-propyl fumarate, diisopropyl fumarate, dimethyl itaconate, and mixtures thereof.

29. (currently amended) ~~A~~ The solvent-based primer composition ~~comprising the modified polyolefin of claim 24, further comprising~~ a solvent, and optionally, a photoinitiator.

30. (currently amended) The ~~solvent-based~~ primer composition of claim 29, wherein the solvent is selected from the group consisting of ester solvents, ketone solvents, aliphatic solvents, aromatic solvents, and mixtures thereof.

31. (currently amended) The ~~solvent-based~~ primer composition of claim 29, wherein said photoinitiator is present and is selected from the group consisting of acetophenone and benzophenone/tertiary amine combinations; organic peroxides; benzoin and its ethers; and benzil and benzil ketals.

32. (currently amended) The ~~solvent-based~~ primer composition of claim 29, wherein said photoinitiator is present ~~added~~ in the range of 0.01 to 8.0 weight percent based on the non-volatile, ethylenically unsaturated content of the coating composition.

33. (currently amended) The ~~solvent-based~~ primer composition of claim 29, further comprising auxiliary polymerizable monomers and/or oligomers.

34. (currently amended) The ~~solvent-based~~ primer composition of claim 33, wherein said auxiliary polymerizable monomers and/or oligomers is selected from the group consisting of vinyl acetate, N-vinyl pyrrolidone methyl (meth)acrylate, butyl (meth)acrylate, 2-hydroxyethyl (meth)acrylate, neopentylglycol di(meth)acrylate,

triethyleneglycol di(meth)acrylate, trimethylolpropane triacrylate, (meth)acrylated urethanes, (meth)acrylated epoxies, and (meth)acrylated polyesters and polyethers.

35. (currently amended) An ~~modified polyolefin~~ adhesive composition comprising:

- a. the primer ~~modified polyolefin~~ composition of claim 24,
- b. an adhesive, and optionally,
- c. a photoinitiator.

36. (currently amended) The ~~modified polyolefin~~ adhesive composition of claim 35, wherein said photoinitiator is present and is selected from the group consisting of acetophenone and benzophenone/tertiary amine combinations; organic peroxides; benzoin and its ethers; and benzil and benzil ketals.

37. (currently amended) The ~~modified polyolefin~~ adhesive composition of claim 35, further comprising auxiliary polymerizable monomers and/or oligomers.

38. (currently amended) The ~~modified polyolefin~~ adhesive composition of claim 37, wherein said auxiliary polymerizable monomers and/or oligomers is selected from the group consisting of vinyl acetate, N-vinyl pyrrolidone methyl (meth)acrylate, butyl (meth)acrylate, 2-hydroxyethyl (meth)acrylate, neopentyl glycol di(meth)acrylate, triethyleneglycol di(meth)acrylate, trimethylolpropane triacrylate, (meth)acrylated urethanes, (meth)acrylated epoxies, and (meth)acrylated polyesters and polyethers.

39. (currently amended) A process for preparing a coated substrate comprising:

- a. applying the primer ~~modified polyolefin~~ composition of claim 24 to a substrate;
- b. exposing the ~~modified polyolefin~~ primer composition on the substrate to an amount of ultraviolet radiation sufficient to effect a desired degree of curing of said ~~modified polyolefin~~ primer on said substrate; and

c. applying a paint topcoat to said substrate.

40. (currently amended) An article of manufacture comprising a substrate and the ~~modified polyolefin~~ primer composition of claim 1.

41. (currently amended) An article of manufacture comprising a substrate and the ~~modified polyolefin~~ primer composition of claim 24.

42. (new) The primer composition of claim 1, wherein the pendant unsaturated groups are provided on the modified polyolefin in an amount sufficient to polymerize the modified polyolefin upon exposure to ultraviolet radiation.

43. (new) The primer composition of claim 24, wherein the pendant unsaturated groups are provided on the modified polyolefin in an amount sufficient to polymerize the modified polyolefin upon exposure to ultraviolet radiation.